



JPW/AF

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
Before the Board of Patent Appeals and Interferences

In re Patent Application of

Atty Dkt. 3830-13

C# M#

ALLEN et al.

TC/A.U.: 3618

Serial No. 10/751,432

Examiner: J. Shriver, II

Filed: January 6, 2004

Date: April 1, 2005

Title: SHUTTLE CAR WITH FIXED HEIGHT DISCHARGE BOOM (AS AMENDED)

Mail Stop Appeal Brief - Patents

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

☐ Correspondence Address Indication Form Attached.

☐ **NOTICE OF APPEAL**

Applicant hereby **appeals** to the Board of Patent Appeals and Interferences

from the last decision of the Examiner twice/finally rejecting applicant's claim(s). \$500.00 (1401)/\$250.00 (2401) \$

☒ An appeal **BRIEF** is attached in the pending appeal of the above-identified application \$500.00 (1402)/\$250.00 (2402) \$ 500.00

☐ Credit for fees paid in prior appeal without decision on merits -\$ ( )

☐ A reply brief is attached in triplicate under Rule 41.41 (no fee)

☐ Petition is hereby made to extend the current due date so as to cover the filing date of this paper and attachment(s)

One Month Extension \$120.00 (1251)/\$60.00 (2251)  
Two Month Extensions \$450.00 (1252)/\$225.00 (2252)  
Three Month Extensions \$1020.00 (1253)/\$510.00 (2253)  
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☐ "Small entity" statement attached.

Less month extension previously paid on -\$ ( )

**TOTAL FEE ENCLOSED \$ 500.00**

Any future submission requiring an extension of time is hereby stated to include a petition for such time extension. The Commissioner is hereby authorized to charge any deficiency, or credit any overpayment, in the fee(s) filed, or asserted to be filed, or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our **Account No. 14-1140**. A duplicate copy of this sheet is attached.

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NIXON & VANDERHYE P.C.  
By Atty: Alan M. Kagen, Reg. No. 36,178

Signature: Alan M. Kagen



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**APPEAL BRIEF**

Sir:

Applicants hereby **appeal** to the Board of Patent Appeals and Interferences from  
the last decision of the Examiner.

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(I) **REAL PARTY IN INTEREST**

The real party in interest is Phillips Machine Service, Inc.

**(II) RELATED APPEALS AND INTERFERENCES**

The Appellants, the undersigned, and the assignee are not aware of any related appeals, interferences, or judicial proceedings (past or present), which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

**(III) STATUS OF CLAIMS**

Claims 23-29 are pending, all of which have been rejected. Thus, the rejections of claims 23-29 are appealed herein. A list of the claims on appeal is provided in the Appendix.

(IV) **STATUS OF AMENDMENTS**

No amendments have been filed subsequent to Final Rejection dated  
November 1, 2004.

(V) **SUMMARY OF CLAIMED SUBJECT MATTER**

The present invention relates to battery powered mining vehicles such as shuttle cars. In the use of shuttle cars, it is typical that there is an elevating discharge assembly (which can be raised and lowered) at the discharge (unloading) end, particularly for cable shuttle cars. For many purposes, however, such an elevating structure is not useful, and with the particular battery powered shuttle car of this invention, it can be much more desirable to provide a fixed height discharge at the unloading end.

When operating shuttle cars, it is highly desirable that the operator be able to effectively determine the proper position of the load with respect to the discharge end in order to avoid spillage on the floor. It is difficult to position the operator's compartment safely and effectively (so that the operator can easily operate the shuttle car), while not interfering with the coal or other mined material transport function of the conveyor, and still allow the operator to see when the shuttle car is "full" of material, so that it should be operated to go to a discharge location. To solve this problem, it may be desirable to incorporate a load indicator or the like viewable to the operator.

With reference to FIGURES 1 and 2, a first embodiment of the battery powered shuttle car 10 is illustrated comprising a frame 11 that includes first and second side portions 12, 13, and any suitable cross portions (shown schematically at 14 in FIGURE 1, but alternatively provided by a frame portion 15), and a conveyor of conventional configuration -- only shown schematically by reference numeral 16 in FIGURE 1, but shown, in one embodiment, in more detail in FIGURE 13 -- between the side portions 12,



13 and extending substantially the effective length of the frame 11 for conveying material from one end of the frame 11 to the other. See the specification at page 7, lines 21-28.

The shuttle car 10 also has at least four wheels with tires 17, at least two associated with each frame side portion 12, 13, for mounting the frame 11 for movement over a mine floor or the like. Reversible electric motors, preferably DC motors 18, are provided for powering the wheeled tires 17 (mounted on conventional axles or the like) to effect either forward or reverse movement of the shuttle car 10, as indicated by the double arrows 19 in FIGURE 1. As illustrated in FIGURE 3, one motor 18 can be provided for driving each wheel/tire 17. Alternatively, two motors 18 may be provided, one for driving the rear tires, and the other the front tires; or one for driving the right side tires, and the other the left side tires. Also, a motor 22 can be provided for driving a hydraulic pump to supply hydraulic fluid to any hydraulic cylinders or other hydraulic motors or other devices on or associated with the shuttle car 10 (e.g. for driving wheels, battery changing, car lock-down, conveyor tilting or adjusting, cab adjustment or leveling, etc.). Also, one or more motors like or unlike the motor 18, can be provided for driving the conventional conveyor. See page 7, line 28 through page 8, line 13.

One or more (preferably at least two) batteries 20 are operatively mounted (i.e., in any suitable manner) on the frame 11 for powering the motors 18 and 22. See page 8, lines 14-15.

In the embodiment illustrated in FIGURE 4, the discharge end 81 of the shuttle car 10 preferably has a fixed height configuration, as illustrated schematically at 82 in FIGURES 4 and 5. That is, there is no elevating (raised or lowered) discharge assembly,

but rather the fixed height configuration provides for ease of operation, and reduces the cost and complication of the shuttle car, without any significant drawback. Elimination of the elevating discharge boom enables the integration of the discharge boom into the main part of the frame or body. This provides additional structural rigidity and integrity, eliminates weight and complexity of hinges and hydraulic devices, provides additional cubic volume---all of which contribute to increased payload capacity. A low seam variant of the shuttle car may incorporate an elevating discharge conveyor in order to be able to cope with undulations and still discharge above the receiving hopper. See page 9, line 26 through page 10, line 4.

The shuttle car 10 according to the invention may also be provided with a "full load" indicator, shown schematically at 83 in FIGURES 4 and 5. An operator positioned in the operator cab or compartment 23 often has a difficult time in safely viewing when the coal or other material, which is transported in the direction of the arrow 84 in FIGURE 4 from the receiving end 80 to the discharge end 81, has reached the end of conveyor 16 (i.e. when the conveyor/car is full, but is not overrun). It is clearly advantageous to transport a full, but not overloaded, shuttle car 10 between the receiving and ultimate discharge locations in order to optimize the material transport process and maximize the amount of material transported for a given charge of the batteries 20. To facilitate that purpose, the "full load" indicator 83 is utilized. See page 14, line 28 through page 15, line 5.

In the simple and advantageous mechanical configuration of the full load indicator 83 in FIGURES 23-25, a material-engaging sensing arm 85 is provided mounted by a

bushing 86 in a substantially vertical wall 87 defining one side of the conveyor 16. The bushing 86 may be connected to the wall 87 by a weld shown schematically at 88 in FIGURE 23 where the bushing 86 passes through an opening in the wall 87. A pivot rod 89 extends through the bushing and is either releasably or permanently connected (e.g. by screws, a weld, or the like) to the sensing arm 85 at one end thereof, and to an indicator, such as a flag 90, at the other end thereof. See page 15, lines 16-23.

As shown by the side view of FIGURE 24, when coal or other material moving in the direction 84 contacts the sensing arm 85, it causes the arm 85 to pivot about the axis defined by the rod 89 in the bushing 86, as indicated by the arrow 91 in FIGURE 24. This causes the flag 90 to move to a substantially upright position as indicated schematically in dotted line in FIGURE 24. See page 15, lines 24-28.

**(VI) GROUND OF REJECTION TO BE REVIEWED ON APPEAL**

1. Claims 23, 26, 27 and 29 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 2,405,636 to Beck.
2. Claims 23, 24, 27 and 28 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,576,107 to Brasher.
3. Claim 25 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Brasher in view of U.S. Patent No. 5,873,431 to Butler et al.

(VII) ARGUMENT

1. Claims 23, 26, 27 and 29 are not anticipated under 35 U.S.C. §102(b) by U.S. Patent No. 2,405,636 to Beck.

With regard to the claimed discharge end of the vehicle frame and conveyor having a substantially fixed height, the Office Action accurately acknowledges that "the specification [in Beck] does not disclose the discharge end of the conveyor being height adjustable." From this, however, the Office Action improperly infers that the discharge end disclosed in Beck therefore has a substantially fixed height. To the contrary, however, "to serve as an anticipation when the reference is silent about the asserted inherent characteristic, such gap in the reference may be filled with recourse to extrinsic evidence. Such evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference and that it would be so recognized by persons of ordinary skill." *Continental Can Co. USA v. Monsanto Co.*, 948 F.2d 1264 (Fed. Cir. 1991). Certainly, the present specification should not serve as the "extrinsic evidence" to fill the gap in the reference applied against it.

The Beck patent is generally focused on independent drive means for each wheel of the vehicle. The structure of the conveyor is thus not pertinent to the invention, and details of the conveyor construction are neither described nor illustrated. Although the Office Action references a "fixed discharge end" in Figure 2 of Beck, an examination of Figure 2 reveals a side elevation view, which would not necessarily illustrate the "structural elements to hinge the discharge end" (nor would any view for that matter when the patent is not concerned with conveyor structure). The Beck patent provides

some insight to the conveyor construction, however, in the paragraph beginning at column 1, line 54. The patent provides that an endless chain flight conveyor enables the coal to be unloaded mechanically from one end of the vehicle “in the usual manner.” Since no other prior art reference of record describes a vehicle including a discharge end with a substantially fixed height, and height adjustable constructions were prevalent during the time of the Beck patent, it is reasonable to assume that those of ordinary skill in the art would interpret the “usual manner” as a conveyor including a height adjustable discharge end.

For at least these reasons, Appellants respectfully submit that the rejection is misplaced.

Independent claim 27 defines subject matter related to claim 23, and Appellants submit that claim 27 is allowable for similar reasons.

With respect to dependent claims 26 and 29, Appellants respectfully submit that these claims are allowable at least by virtue of their dependency on an allowable independent claim. Moreover, the Office Action incorrectly assumes that since the Beck specification is silent with regard to the discharge end being height adjustable that it follows that the discharge end must include “a discharge boom integrated into the vehicle frame defining a one-piece frame construction.” Similar to the reasons discussed above, however, Appellants respectfully submit that this missing descriptive matter is not necessarily present in the Beck description, and for this reason also, Appellants submit that the rejection is misplaced.

Reversal of the rejection is respectfully requested.

2. Claims 23, 24, 27 and 28 are not anticipated under 35 U.S.C. §102(b) by U.S. Patent No. 4,576,107 to Brasher.

With regard to the fixed height of the discharge end, although the Office Action contends that Brasher discloses a discharge end having a substantially fixed height, the Office Action subsequently recognizes that "the discharge end is adjustable." As would be apparent to those of ordinary skill in the art with reference to the present specification, an ability to adjust the height of the discharge end (as in Brasher) is in direct contrast with an important feature of the present invention. The specification describes that with the fixed height configuration of the discharge end, there is no elevating (raised or lowered) discharge assembly, but rather the fixed height configuration provides for ease of operation, and reduces the cost and complication of the shuttle car, without any significant drawback. Additionally, elimination of the elevating discharge boom enables the integration of the discharge boom into the main part of the frame or body. This provides additional structural rigidity and integrity, eliminates weight and complexity of hinges and hydraulic devices, and provides additional cubic volume - all of which contribute to increased payload capacity. See, for example, page 9, line 26 - page 10, line 4.

Appellants thus respectfully submit that those of ordinary skill in the art would readily understand that the claimed "substantially fixed height" of the discharge end precludes any adjustability of the discharge end, and consequently, the Brasher patent is irrelevant to the present invention. Claim 27 defines related subject matter.

The Office Action questions how adjustability can be precluded when the claims define a "substantially fixed height." Assuming the Examiner's concern relates to use of the word "substantially," it has been held that "like the term 'about,' the term 'substantially' is a descriptive term commonly used in patent claims to 'avoid a strict numerical boundary to the specified parameter.'" *Pall Corp. v. Micron Seps.*, 66 F.3d 1211, 1217, 36 USPQ 2d 1225, 1229 (Fed. Cir.1995). Indeed, there is authority for the proposition that "substantially" should always be implied in every claim, even when not introduced. *Musher Foundation, Inc. v Alba Trading Co., Inc.*, 150 F.2d 885, 889, 66 USPQ 183, 186-187 (2d Cir. 1945). With the present construction, as would be apparent to those of ordinary skill in the art, the discharge end may be subject to slight deflections via external forces, vehicle movement, etc., and the use of "substantially" is intended to avoid a strict interpretation of "fixed" as "entirely immovable." Since this would be abundantly clear to those of ordinary skill in the art and would thus be implied in the claim regardless of its presence, if necessary, the term "substantially" may be deleted.

With respect to dependent claims 24 and 28, Appellants submit that these claims are allowable at least by virtue of their dependency on an allowable independent claim (although claim 24 has been rewritten in independent form, Appellants submit that it too is allowable at least by the inclusion of the claim 23 subject matter).

Reversal of the rejection is thus respectfully requested.



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3. Claim 25 is not unpatentable under 35 U.S.C. §103(a) over Brasher in view of U.S. Patent No. 5,873,431 to Butler et al.

The Butler patent does not correct the deficiencies noted above with regard to Brasher. As a consequence, Appellants submit that claim 25 is allowable at least by virtue of its dependency on an allowable independent claim. That is, neither Brasher nor Butler provides any teaching or suggestion to modify the Brasher construction to include a discharge end having a substantially fixed height.

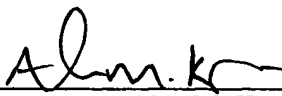
Appellants thus respectfully request reversal of the rejection.

#### CONCLUSION

In conclusion it is believed that the application is in clear condition for allowance; therefore, early reversal of the Final Rejection and passage of the subject application to issue are earnestly solicited.

Respectfully submitted,

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(VIII) CLAIMS APPENDIX

23. A hauler vehicle for mining operation comprising:  
a vehicle frame coupleable with a source of motive power; and  
a conveyor centrally disposed and coupled with the vehicle frame, wherein the vehicle frame and conveyor define a receiving end and a discharge end, and wherein the discharge end has a substantially fixed height.

24. A hauler vehicle for mining operation comprising:  
a vehicle frame coupleable with a source of motive power;  
a conveyor centrally disposed and coupled with the vehicle frame, wherein the vehicle frame and conveyor define a receiving end and a discharge end, and wherein the discharge end has a substantially fixed height; and  
a full load indicator mechanism at least partially positioned adjacent the discharge end, the full load indicator mechanism providing an indication when the conveyor is substantially full.

25. A hauler vehicle according to claim 23, wherein the source of motive power comprises a motor connected to a vehicle-mounted battery.

26. A hauler vehicle according to claim 23, wherein the discharge end comprises a discharge boom integrated into the vehicle frame defining a one-piece frame construction.

27. A method of constructing a hauler vehicle for mining operation, the method comprising:

providing a vehicle frame and coupling the vehicle frame with a source of motive power; and

providing a conveyor centrally disposed and coupled with the vehicle frame, wherein the vehicle frame and conveyor define a receiving end and a discharge end, and configuring the discharge end with a substantially fixed height.

28. A method according to claim 27, further comprising positioning a full load indicator mechanism adjacent the discharge end, the full load indicator mechanism providing an indication when the conveyor is substantially full.

29. A method according to claim 27, comprising integrating a discharge boom into the vehicle frame, defining a one-piece frame construction.